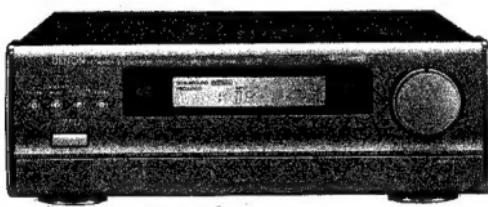


# DENON

Hi-Fi AV Surround Amplifier

## MODEL AVC-77 AV SURROUND AMPLIFIER



NIPPON COLUMBIA CO., LTD.

## SPECIFICATIONS

### • Audio section

#### Rated maximum output

(All properties shown are only for the power amplifier stage.)

#### Frequency response

#### Rated input/input impedance

#### S/N ratio

#### Speaker impedance

#### LINE Input sensitivity/impedance

#### CENTER (Center 1ch driven)

30 W (8 Ω/ohms, 1 kHz with 1.0% THD)

#### REAR (rear 2ch driven)

15 W + 15 W (8 Ω/ohms, 1 kHz with 1.0% THD)

40 Hz to 20 kHz±3 dB

150 mV/47 kΩ/ohms

90 dB

Center: 8 Ω/ohms

Rear: 8 Ω/ohms

150 mV/47 kΩ/ohms

### • Video section

#### Input and output level/impedance

1 Vp-p/75 Ω/ohms

2 Hz to 8 MHz+0, -3 dB

### • General

#### Power source

AC 230 V, 50 Hz

135 W

#### Power consumption

270 (W) × 96 (H) × 313 (D) mm

#### Maximum external dimensions

(10-5/8" × 3-25/32" × 12-21/64")

4.7 kg (10 lbs 6 oz)

#### Weight

### • Remote control unit (RC-17B)

#### Remote control system

Infrared pulse

15

#### Number of buttons

Two DC 1.5V R6P/AA batteries

#### Power supply

48 (W) × 175 (H) × 18 (D) mm

#### Maximum external dimensions

(1-57/64" × 6-57/64" × 45/64")

#### Weight

120g (including batteries) (Approx. 4 oz)

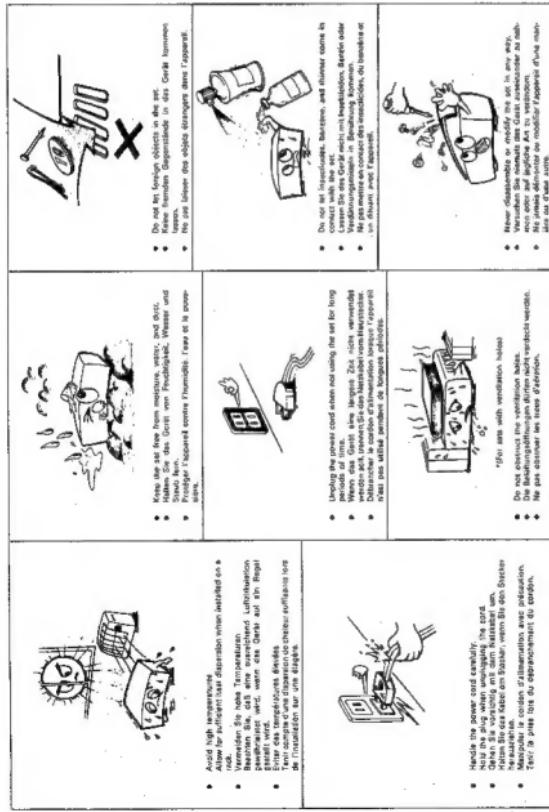
\* Maximum dimensions include controls, jacks, and covers.

(W) = width, (H) = height, (D) = depth

\* Specifications are subject to change without notice.

Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under one or more of the following patents: U.S. numbers 3,632,886, 3,746,792 and 3,959,590; Canadian numbers 1,004,603 and 1,037,877. "Dolby" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

# 1 INTRODUCTION / EINFÜHRUNG / INTRODUCTION NOTE ON USE / HINWEISE ZUM GEBRAUCH / OBSERVATIONS RELATIVES A L'UTILISATION

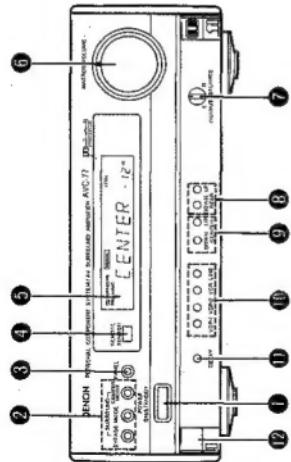


**— CAUTION / VORSICHT / ATTENTION —**

- If the system should smoke or produce strange smells, immediately set the power switch to the STANDBY position, unplug the power cord, and contact your store or provider.
- S'il le système fume ou dégage des odeurs étranges, mettez immédiatement l'interrupteur de position STANDBY (Branchez-le), débranchez la prise de courant et contactez votre revendeur.
- Si el sistema produce humo o olores extraños, inmediatamente establezca la posición STANDBY (Branchezlo), desconecte el cable de alimentación y comuníquese con su distribuidor.

**"SERIAL NO. PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"**

**2 NAMES OF PARTS/BEZEICHNUNG DER TEILE/NOMENCLATURE**  
 (Front Panel/Frontplatte/Panneau avant)



FOR ENGLISH READERS

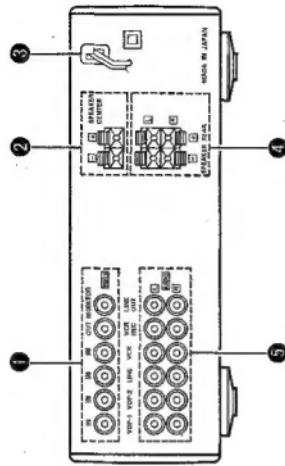
- ① POWER button
- ② SURROUND select button
- ③ Remote sensor
- ④ MASTER volume control
- ⑤ Master balance control
- ⑥ Output balance control
- ⑦ Rear channel level button
- ⑧ FUNCTION button
- ⑨ DELAY TIME button
- ⑩ Trip door
- ⑪ Center channel level button
- ⑫ Line input
- ⑬ Line output
- ⑭ Headphone jack
- ⑮ Volume control
- ⑯ Mute switch
- ⑰ Frequency response switch
- ⑱ Input selector switch
- ⑲ Surround switch
- ⑳ Power indicator
- ㉑ Surround indicator
- ㉒ Master volume indicator
- ㉓ Master balance indicator
- ㉔ Output balance indicator
- ㉕ Rear channel indicator
- ㉖ Function indicator
- ㉗ Delay time indicator

FOR DEUTSCHE LÄSER

- ① POWER-Taste (Netz)
- ② SURROUND-Wahlstufe (Surround)
- ③ Fernbedienungsempfänger
- ④ MASTERRAUMVOLUME-Regler (Volumeneinstellung)
- ⑤ MASTERBALANCE-Regler (Ausbalancieren)
- ⑥ OUTPUTBALANCE-Regler (Ausbalancieren)
- ⑦ REAR-RAUMLV (Regel für hintern Raum)
- ⑧ CENTER-Taste (Funktion für Mitterrahmen)
- ⑨ FUNCTION-Taste (Funktion)
- ⑩ DELAY-TIME-Taste (Verzögerungseinst.)
- ⑪ Knopf
- ⑫ Presse VIDEO INPUT/OUTPUT (sendet/sieht video)
- ⑬ Bremse drehende CENTER (drehst control)
- ⑭ Cordon secteur avec filtre
- ⑮ Borne d'entrée REAR (télévisi audio)
- ⑯ Presse AUDIO INPUT/OUTPUT (envoie/sortie audio)

FOR DEUTSCHE LÄSER

- ① VIDEO INPUT/OUTPUT (siehe)
- ② CENTER drehend spätere (terminale)
- ③ AC cord durch plug
- ④ RARF-element spätere terminal
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## **■ INSTALLATION PRECAUTIONS**

- Read this manual carefully to ensure that you take full advantage of all the features of this surround amplifier. Keep the manual in a safe place for future reference.**

**Be sure to check that the date of purchase and the store's name of purchase have been filled in properly on the warranty issued at your store of purchase.**

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<b>161</b>	<b>1</b>	<b>162</b>	<b>162</b>
<b>162</b>	<b>1</b>	<b>163</b>	<b>163</b>
<b>163</b>	<b>1</b>	<b>164</b>	<b>164</b>
<b>164</b>	<b>1</b>	<b>165</b>	<b>165</b>
<b>165</b>	<b>1</b>	<b>166</b>	<b>166</b>
<b>166</b>	<b>1</b>	<b>167</b>	<b>167</b>
<b>167</b>	<b>1</b>	<b>168</b>	<b>168</b>
<b>168</b>	<b>1</b>	<b>169</b>	<b>169</b>
<b>169</b>	<b>1</b>	<b>170</b>	<b>170</b>
<b>170</b>	<b>1</b>	<b>171</b>	<b>171</b>
<b>171</b>	<b>1</b>	<b>172</b>	<b>172</b>
<b>172</b>	<b>1</b>	<b>173</b>	<b>173</b>
<b>173</b>	<b>1</b>	<b>174</b>	<b>174</b>
<b>174</b>	<b>1</b>	<b>175</b>	<b>175</b>
<b>175</b>	<b>1</b>	<b>176</b>	<b>176</b>
<b>176</b>	<b>1</b>	<b>177</b>	<b>177</b>
<b>177</b>	<b>1</b>	<b>178</b>	<b>178</b>
<b>178</b>	<b>1</b>	<b>179</b>	<b>179</b>
<b>179</b>	<b>1</b>	<b>180</b>	<b>180</b>
<b>180</b>	<b>1</b>	<b>181</b>	<b>181</b>
<b>181</b>	<b>1</b>	<b>182</b>	<b>182</b>
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<b>183</b>	<b>1</b>	<b>184</b>	<b>184</b>
<b>184</b>	<b>1</b>	<b>185</b>	<b>185</b>
<b>185</b>	<b>1</b>	<b>186</b>	<b>186</b>
<b>186</b>	<b>1</b>	<b>187</b>	<b>187</b>
<b>187</b>	<b>1</b>	<b>188</b>	<b>188</b>
<b>188</b>	<b>1</b>	<b>189</b>	<b>189</b>
<b>189</b>	<b>1</b>	<b>190</b>	<b>190</b>
<b>190</b>	<b>1</b>	<b>191</b>	<b>191</b>
<b>191</b>	<b>1</b>	<b>192</b>	<b>192</b>
<b>192</b>	<b>1</b>	<b>193</b>	<b>193</b>
<b>193</b>	<b>1</b>	<b>194</b>	<b>194</b>
<b>194</b>	<b>1</b>	<b>195</b>	<b>195</b>
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<b>196</b>	<b>1</b>	<b>197</b>	<b>197</b>
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<b>199</b>	<b>1</b>	<b>200</b>	<b>200</b>
<b>200</b>	<b>1</b>	<b>201</b>	<b>201</b>
<b>201</b>	<b>1</b>	<b>202</b>	<b>202</b>
<b>202</b>	<b>1</b>	<b>203</b>	<b>203</b>
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<b>207</b>	<b>1</b>	<b>208</b>	<b>208</b>
<b>208</b>	<b>1</b>	<b>209</b>	<b>209</b>
<b>209</b>	<b>1</b>	<b>210</b>	<b>210</b>
<b>210</b>	<b>1</b>	<b>211</b>	<b>211</b>
<b>211</b>	<b>1</b>	<b>212</b>	<b>212</b>
<b>212</b>	<b>1</b>	<b>213</b>	<b>213</b>
<b>213</b>	<b>1</b>	<b>214</b>	<b>214</b>
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<b>223</b>	<b>1</b>	<b>224</b>	<b>224</b>
<b>224</b>	<b>1</b>	<b>225</b>	<b>225</b>
<b>225</b>	<b>1</b>	<b>226</b>	<b>226</b>
<b>226</b>	<b>1</b>	<b>227</b>	<b>227</b>
<b>227</b>	<b>1</b>	<b>228</b>	<b>228</b>
<b>228</b>	<b>1</b>	<b>229</b>	<b>229</b>
<b>229</b>	<b>1</b>	<b>230</b>	<b>230</b>
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<b>235</b>	<b>1</b>	<b>236</b>	<b>236</b>
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<b>238</b>	<b>1</b>	<b>239</b>	<b>239</b>
<b>239</b>	<b>1</b>	<b>240</b>	<b>240</b>
<b>240</b>	<b>1</b>	<b>241</b>	<b>241</b>
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<b>243</b>	<b>1</b>	<b>244</b>	<b>244</b>
<b>244</b>	<b>1</b>	<b>245</b>	<b>245</b>
<b>245</b>	<b>1</b>	<b>246</b>	<b>246</b>
<b>246</b>	<b>1</b>	<b>247</b>	<b>247</b>
<b>247</b>	<b>1</b>	<b>248</b>	<b>248</b>
<b>248</b>	<b>1</b>	<b>249</b>	<b>249</b>
<b>249</b>	<b>1</b> </		

Check that the following parts are included in the package aside from the main unit:

3 BEFORE USING

- read the following cautions carefully before using the amp.

- **Unplugging the set**  
Be sure to unplug the power cord and disconnect other cords connecting the amplifier to other audio units before moving the amplifier to prevent damaging or short-circuiting the equipment.

- circuiting the cords.  
Before turning on the power switch  
Check again to make sure that all connections are correct.

- and that there are no problems with the connection cords. Be sure to turn the power **STANDBY** before disconnecting or connecting cords.

## **5.5 HANDLING PRECAUTIONS**

- Switching the input function when the input jacks are unconnected**  
Switching the input function when a component is not connected to the input jacks may result in the generation of click noise. If this should happen, turn down the MASTER VOLUME or connect a component to the input jacks.

- Playback with Dolby Pro Logic**  
The Dolby Pro Logic position provides optimum effectiveness for sources recorded with Dolby Surround. A different

- surround mode should be selected when playing back sources other than this type. Note in particular that when playing back monaural recording sources, the bypass mode or the simulated mode will not provide a audible effect.

- Ringline of the LINE OUT leads.**  
An electronic circuit has been connected to the LINE OUT jack. The circuit generates the output signal for approximately 8 seconds after the power has been switched on. Raising the volume during this operation will result in an

- Driving** **outdoors** **is** **dangerous** **and** **illegal**. **Do** **not** **drive** **while** **drunk**.

- The rear level will be set for sources other than Dolby Surround sources. The reason for this is that a rear playback signal is not contained in the software. When playing back surround sources with a surround function, the mode should be set to something other than Dolby Surround. The rear output level may seem small for software having a small rear speakers level when no dolby surround sources are played.

- signal, even Dolby Surround Sources.

- That angular or is equipped with a door. On the front panel, press the "PUSH OPEN" button printed at the upper right edge of its door to release and open a door. Likewise, to close a door, press in the same manner until a click sound is heard.

**NOTE:** The door will open naturally once it has been released, but it may stop before fully opening. This is not a fault; just lightly push the door open.

## 6 CONNECTIONS

### Connecting video decks (VCR)

Connections for video input and output:

Connect the video deck's video output jack to the amplifier's VIDEO INPUT jack using a 75 Ω cable. Connect the video deck's video output jack to the video deck's VCR OUT jack using a 75 Ω cable pin-plug cord.

### Connecting the audio input and output jacks

Connect the video deck's audio output jacks to the amplifier's AUDIO IN jacks and the video deck's audio input jacks to the amplifier's AUDIO OUT jacks using pin-plug cords.

### Connecting a video disc player (VDP)

Conceal the video disc player's video output jack to the amplifier's VIDEO VDP (yellow) jack using a 75 Ω cable video coaxial cable pin-plug cord.

Connect the video disc player's analog audio output jacks to the amplifier's AUDIO VDP INPUT jacks using pin-plug cords.

### Connecting a speaker system

- Connect the TO VIDEO INPUT jack in the amplifier's VIDEO INPUT panel to the video deck's video input jack using a 75 Ω cable video coaxial pin-plug cord.

### Connecting a monitor TV

- Connect the TO VIDEO INPUT jack in the amplifier's VIDEO INPUT panel to the monitor TV's video input jack using a 75 Ω cable video coaxial pin-plug cord.

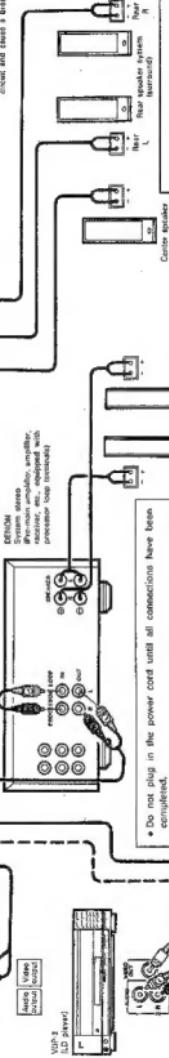
### Connecting the speaker system

- A total of three speakers can be connected to the AVC-77. Including the pair of rear speakers, connect the speaker terminals to the speaker system, making sure that the polarities are inverted (G with G and D with G). Minimum of patterns will result in weak sound reproduction.

- Connect the speaker wires to the speaker terminals, making sure that the polarities are inverted (G with G and D with G). Minimum of patterns will result in weak sound reproduction.

- When making the connection, take care that the speaker cord centre in contact with adjacent pins. This may cause a short circuit or damage to the speaker.

- Speaker Impedance
  - The impedance is 8 ohms for front and rear speakers.
  - Use of a speaker with an impedance below this range may damage the protection circuit and cause a breakdown.



Power source  
Power cord and terminal

### Connecting the speaker system

The speaker system has two left channel balanced audio source terminals for the front speakers. These should be connected to the left terminals and their speaker terminals for the right channel should be connected to the R terminals.

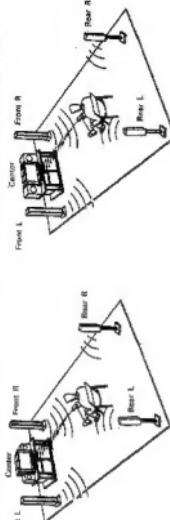
- Do not plug in the power cord until all connections have been completed.
- Connect the left and right channels properly (left with left, etc.) with matching connections; otherwise, noise will result in the generation of noise.
- Note that pin pin 1 goes together with power cords or plating terminals near a power transformer will result in the introduction of hum or other noise.
- Precautions when connecting speakers
  - If a speaker is placed near a TV or video monitor, the screen may be disturbed by the speaker's magnetism. If this happens, move the speaker away to a position where it does not have this effect.



Power source  
Power cord and terminal

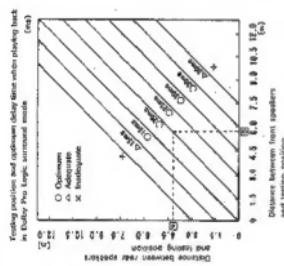
## 7 DOLBY PRO LOGIC SURROUND

- Speaker placement in Dolby Pro Logic surround mode While playing back music in Dolby Pro Logic surround, use of a center speaker will provide the best effect.

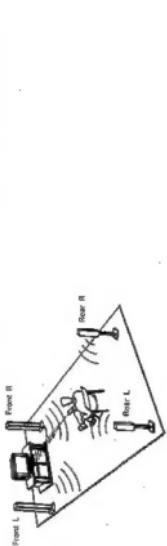


Wise mode

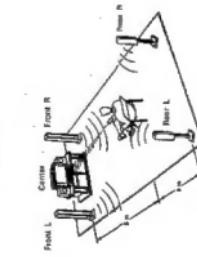
**Wise mode:** This is the base mode to use when the center channel speaker is of the same grade as the speakers on the right and left. The same frequency band, from low notes to high, is output to the center channel playback speaker, giving an exciting sound field for your enjoyment.



- Setting delay time**  
The optimum delay time depends on the following position: Set at the original unit on the right and set the distance to the size of your room and your sitting position.  
For example, if your listening position is 6 m away from the front speakers, and 4 m away from the rear speakers, the optimum delay time will be 20 msec.  
The variation range of the delay time differs from one mode to another.  
For more information on the delay time variation range, see page 7.
- Adjusting the input balance**  
This amplifier is equipped with an auto input balance control, so there is no input balance adjustment knob.



**Normal mode:** That is the best mode to use if the center channel speaker is smaller than the speakers on the left and right. Signals of 100 Hz or below, which has almost no effect on orientation, are divided between the left and right channels, and the center channel outputs signals of 100 Hz or more, to the bass on the left and right channels is design.



Phantom mode

**Phantom mode:** This is the mode to use when the center-channel playback speaker is not in use. The phantom mode emphasizes electrically generated signals that create a sense of the playback so that you can enjoy a convincing sound field even without using the center speaker.

The On/Off and delay time setting for the speaker output (FRONT, REAR, CENTER) and the volume adjustment for each speaker speakers can be set individually for each surround mode.

In normal and wise mode the test tone switches in the following order:  
Front Left → Center → Front Right → Rear →  
Front Left → Front Right →  
Rear →

Adjust this volume balance using this signal until the optimum balance is reached.  
In phantom mode the switching is as follows:  
Front Left → Front Right →  
Rear →

Note that on this amplifier, the test tone is produced every 4 seconds after the first 2 seconds.

Use the remote control unit (RC-178) to make adjustments using the test tone.

## 8 PART NAMES AND FUNCTIONS

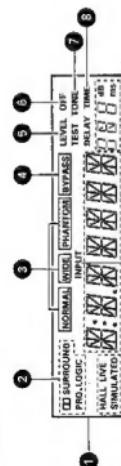
### Front panel

- ① POWER switch**
- ON**: When this switch is pressed once, the power turns on. "MUTING" flashes on the LCD. (The muting circuit is activated while "MUTING" is flashing to prevent noise when the POWER switch is operated. After several seconds the muting circuit turns off if "MUTING" indicator turns off and the set is in the normal operating mode.)
  - STANDBY**: Press this switch once again to set the standby mode. "OFF" is displayed on the LCD.
- SURROUND buttons**
- Use these buttons to select the surround mode. When this button is pressed the surround mode is bypassed and the normal stereo sound is produced. No signals are output to the rear channel.
  - MATRIX selector button**: Press this button to select one of the surround modes shown below.
- Order of priority**
- 
- ② DOLBY SURROUND PRO LOGIC**: Use this mode for video software, etc., recorded in Dolby Surround.
- ② HALL**: Select the earlier mode according to the speaker system being used.
- ③ SIMULATED**: Set the delay time to between 15 msec and 30 msec, according to the size of the room and the position of the speakers.
- ④ LINE**: Use this to create the atmosphere of a program in a studio.
- The delay time is set at 0 msec.
- ⑤ CENTER speaker volume control buttons**
- When this button is pressed, the current settings are displayed on the LCD.
- ⑥ UP**: Press this to increase the volume.
- ⑦ DOWN**: Press this to decrease the volume. The volume changes while one of the buttons is pressed, and stops changing when the button is released. The volume change is displayed on the LCD.
- These buttons do not function when in the hall, live-simulated or Dolby Pro Logic phantom modes.
- ⑧ PANEL button**
- When this button is pressed, the current settings are displayed on the LCD.
- Use this button to switch the LCD display. For details, refer to pages 7 to 8.
- ⑨ REMOTE SENSOR**
- The remote control unit is pointed toward this sensor and operated.
- ⑩ LCD liquid crystal display**
- The surround mode and input and output information is displayed here when the power is turned on. Normally one of the surround modes is displayed. If more than one of the surround modes is selected, a display switching to the last selected mode is displayed for approximately 5 seconds after which the surround mode is once again displayed. Refer to page 8 for details on the LCD indicators.
- ⑪ Master VOLUME control**: Turn the control clockwise ( $\curvearrowright$ ) to increase the volume, counterclockwise ( $\curvearrowleft$ ) to decrease it.
- ⑫ OUTPUT BALANCE control**: Use this to adjust the balance between the left and right outputs to create an effective surround sound.
- ⑬ NEAR speaker volume control buttons**: Use these to adjust the volume of the rear (surround) speakers.
- ⑭ DOWN**: Press this to decrease the volume. The volume changes while one of the buttons is pressed, and stops changing when the button is released. The volume change is displayed on the LCD.
- These buttons do not function when in the bypass mode.
- ⑮ DOLBY SURROUND PRO LOGIC**: Use this mode for video software, etc., recorded in Dolby Surround.
- ⑯ HALL**: Select the earlier mode according to the speaker system being used.
- ⑰ SIMULATED**: Use this to create a surround effect with monaural sources.
- No signals are output to the center channel.
- ⑱ BYPASS**: Use this to create a surround effect with monaural sources.
- The delay time can be set between 0 msec and 30 msec.
- ⑲ LINE**: Use this to create the atmosphere of a program in a studio.
- The delay time is set at 0 msec.
- ⑳ CENTER speaker volume control buttons**
- ⑴ UP**: Press this to increase the volume.
- ⑵ DOWN**: Press this to decrease the volume. The volume changes while one of the buttons is pressed, and stops changing when the button is released. The volume change is displayed on the LCD.
- These buttons do not function when in the hall, live-simulated or Dolby Pro Logic phantom modes.
- ⑶ Input selector buttons**
- Use these buttons to select the input audio and video signals.
- ⑷ VP1**: Press this to use the VDP connected to the VP1 jacks.
- ⑸ VP2**: Press this to use the VDP connected to the VP2 jacks.
- ⑹ VR1**: Press this to use the video deck connected to the VR1 jacks.
- ⑺ VR2**: Press this to use the VR2 jacks.
- ⑻ LINE**: Press this when a amplifier/receiver equipped with program bypass terminals is connected to select that component.
- ⑼ DELAY selector button**
- Press this to switch the delay time, as shown below.
- ⑽ When Dolby Pro Logic is selected with the SURROUND MODE button:**
- |      |             |      |
|------|-------------|------|
| 20ms | —           | 20ms |
| 10ms | —           | 10ms |
| —    | 20ms = 20ms | —    |
| —    | 10ms = 10ms | —    |
- ⑾ When any other surround mode is selected:**
- |      |             |      |
|------|-------------|------|
| 20ms | —           | 20ms |
| 10ms | —           | 10ms |
| —    | 20ms = 20ms | —    |
| —    | 10ms = 10ms | —    |
- ⑿ TAP DOOR**
- Press the right edge to open the door. To close it, press on the right edge. A click is heard to indicate that the door is closed.

## Explanation of the LCD

## Examples of Multi Function Display Patterns

The displayed modes indicate the operations performed when the buttons on the front panel of the AVC-7 or on the remote control unit (RC-V10) are operated.



**1** Multi-function display  
The source is displayed in order each time the HALL button is pressed. Normal surround mode setting is displayed.

**2** DOLBY SURROUND PRO LOGIC indicator  
This is displayed when a Dolby Surround Pro Logic mode is selected with the SURROUND MODE button.

**3** NORMAL, PHANTOM, and WIDE indicators  
These light in the following order:  
NORMAL → PHANTOM → WIDE

**4** BYPASS indicator  
This light when a surround circuit is bypassed by pressing the SURROUND BYPASS button.

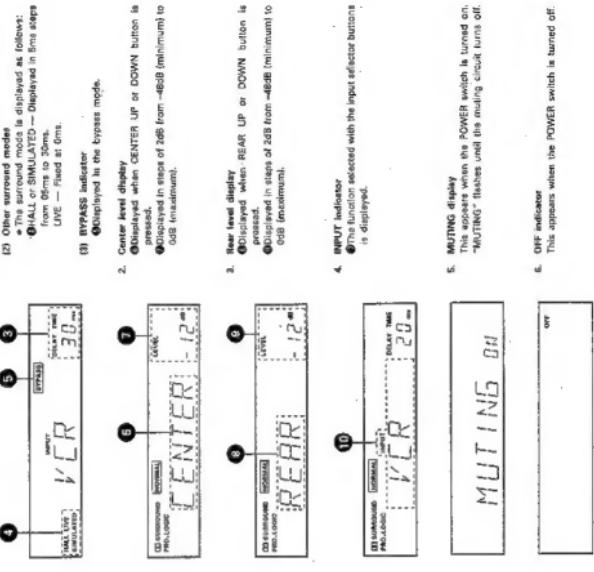
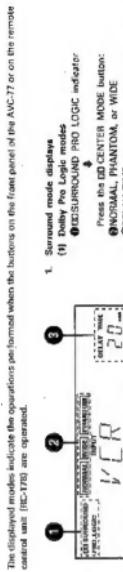
**5** LEVEL indicators  
This light along with section **6** when the REAR and CENTER UP and DOWN buttons are pressed. Adjust the level with the UP and DOWN buttons while watching the display in section **6**. The level is displayed in steps of 2dB from -48dB (minimum) to 0dB (maximum).

**6** OFF indicator  
This light when the standby mode is set by turning off the POWER switch.

**7** TEST TONE indicator  
This light when the TEST TONE button is pressed.  
IRC-781  
Refer to page 10 for details.

**8** DELAY TIME indicator  
This light along with section **9** when in the surround mode. Press the DELAY button to set the delay time.

**9** DOLBY PHONO indicator  
Displayed in Surround mode  
From 5ms to 20ms  
Displayed in Phono mode  
From 50ms to 300ms  
Level  
From 40 Quies.



## 9 OPERATION

### PREPARATIONS FOR PLAYBACK

1. Checking connections
  - Check the connection diagrams figures 5 to 10, and make sure that all connections are correct.
  - Check that the left and right speaker terminals and line priorities, (G), (C), are matched correctly.
  - Check that the power plug cords are connected properly.
  - Check that Left and Right are right.
  - Check that all cables are securely plugged in.
  - Check that the cables used are of the correct type.
2. Checking all 4 test positions
  - If the center channel volume is correct, then turn all volume controls to the 0 position.
  - If the left MASTER VOLUME control is set to the 0 position, by turning it clockwise for a few turns, it will go to the OUTPUT FADE AND C. control switch in the center position.

After making these checks, turn on the power by pressing the POWER switch. The "MUTING" indicator flashes on the LCD, then turns off after several seconds, at which point the set is in the normal operating mode.

**Note on operation:** After turning on during playback, the sound will be interrupted. This is due to the activation of the muting circuit which prevents this generation of noise during switching. It is not a malfunction.

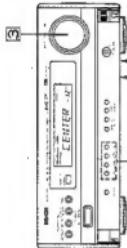
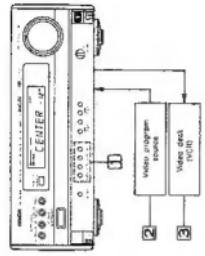
#### Protection circuit ("PROTECTION" display lights)

This amplifier has a built-in high-speed protector circuit.

The purpose of this circuit is to prevent the internal circuits being damaged by the large currents which flow through the inner circuitry of the set when output is sent to a faulty disconnected or short-circuited speaker terminal. When the protector circuit is activated, the speaker output is automatically cut off, and the message "PROTECTION" is displayed. This will happen if you try to turn up the volume while the speaker connection is faulty or if the speaker connection is faulty. In this case, the speaker connection must be checked and repaired before turning up the volume again. If the speaker connection is still damaged after you have repaired it, please contact your dealer or your local Sales Office or Branch Office.

### 1. Program source playback

2. Recording a video program source or making a video copy  
[To record or copy the video source currently monitor]



1. Press the desired FUNCTION button. The function for the button which was pressed is indicated on the LCD.

Program source	FUNCTION Button
To record from a VCR 1 (left priority)	VCR-1
To record from a VCR 2 (right priority)	VCR-2
To record from a VCR 3 (center priority)	VCR-3
To record from a VCR 4 (line priority)	LIVE
To watch and listen to the pictures from a VCR 1 (left priority)	VCR-1
To watch and listen to the pictures from a VCR 2 (right priority)	VCR-2
To watch and listen to the pictures from a VCR 3 (center priority)	VCR-3
To watch and listen to the pictures from a VCR 4 (line priority)	LIVE

1. Press the desired FUNCTION button. The function for the button which was pressed is indicated on the LCD.
  2. Start playback of the desired video program source.
  3. Start recording on the video deck.
- For instructions, consult the operating instructions of the component concerned.

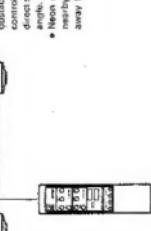
1. Adjust volume.
  2. Start playback of the desired video program source.
  3. Start recording on the video deck.
- For instructions, consult the operating instructions of the component concerned.

## 10 REMOTE CONTROL UNIT

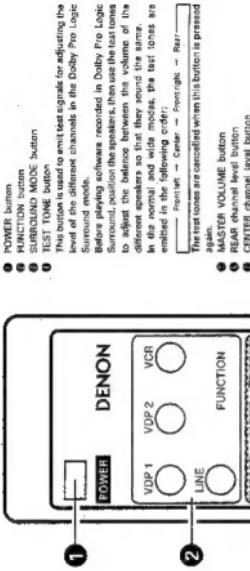
Following the procedure outlined below, insert the batteries before using the remote control unit.

### ■ Range of operation of the remote control unit:

Point the remote control unit at the remote control sensor as shown on the diagram at the left.



Button layout



**NOTES:**

- The remote control unit can be used from a straight distance of approximately 7 meters, but this distance will decrease or disappear, will become difficult if there are obstacles between the remote control unit and the remote control sensor. If the remote control unit and the remote control sensor are located in a dark room, or under strong light, or if separated from the remote control unit and other devices emitting pulse-type wave numbers, may result in malfunction, so keep the set as far away from such devices as possible.

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### ■ Inserting the batteries



1. Open the bottom cover of the remote control unit and remove the battery cover.



2. Insert the two R6P/AA batteries, matching the  $\oplus$  and  $\ominus$  marks on the batteries with those in the case. Close the bottom cover until it clicks shut.

